TECHNOLOGY DIVISION

AMERICAN DYESTUFF REPORTER

Vol. VI, No. 2 Jan. 12, 1920

IN THIS ISSUE

Dyes and the Tariff Commission
A Review of the Activities of This Body as Set Forth in Its Third Annual Report

A Hopeless Muddle
An Editorial

An Improved Mercerizing Process

lished weekly by Howes Publishing Co., Woolworth Bldg., New York, N. Y. Domestic subscriptions $3.00; Canadian $3.50; Foreign $4.00. Entered as sec ond-class matter Nov. 6, 1919, at the New York, N. Y., Post Office under the Act of March 3, 1879.

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AMERICAN DYESTUFF REPORTER

A Weekly Publication devoted to

DYESTUFFS, COLORS and ALLIED CHEMICALS

"Circulated Everywhere Dyestuffs are Used"

Vol. 6 New York, January 12, 1920 No. 2

DYES AND THE TARIFF COMMISSION

Some Recommendations and Activities of the Past, Together with Plans for the Future

FOR purposes of record, so that readers may have the information at hand for future reference, the REPORTER presents this week a resume of the activities of the United States Tariff Commission in connection with the American dye industry, since the creation of the Commission by the Tariff Act of September 8, 1916, as furnished by the third annual report which the Commission recently issued. It is believed that this brief review should be of interest, although it forms but a small part of the work of the Commission and the telling takes up but little of the report, and that the news that the "costs and prices" investigation in the dye and other industries is going forward, aided by increased facilities, should be welcome. The first part of what follows, dealing with the dye and sulphur industries, is taken from a detailed report of the work of the Commission, schedule by schedule, while the latter portion, heralding the preparation of the "costs and prices" report to Congress, comes from a separate part of the document:

SCHEDULE A: CHEMICALS, OILS AND PAINTS

Dyes and other coal-tar chemicals.—On December 12, 1918, the commission sent to the Committee on Ways and Means a report, entitled "Dyes and other coal-tar chemicals," which discussed, in detail, Title V of the act of September 8, 1916, imposing duties on dyes and other chemicals of coal-tar origin. The report pointed out the ways by which the evident intent of Congress in passing this legislation may be evaded. Attention was also called to certain questions on which, in view of developments which have occurred since the passage of the act, Congress might wish to reconsider its original policy. The commission suggested forty-five amendments to the language of the present law, calculated to give more complete effect to its obvious purpose.

Census of dyes and other coal-tar chemicals, 1918.—Under the continuing direction of the President, in anticipation of certain administrative requirements of the revenue act of September 8, 1916, the commission completed and published a second census of dyes and other products of coal-tar origin, covering the year 1918. The results of this census are contained in a report, entitled "Dyes and Related Coal-tar Chemicals, 1918," transmitted on June 12, 1919, to the Committee on Ways and Means. A revised edition of this report was transmitted to the Committee on Ways and Means on July 15, 1919.

This census for 1918 shows that there is no insuperable obstacle to the growth of this industry in the United States. The finished products are now made almost entirely from American raw materials and intermediates. One hundred and seventy-six intermediates were made on a commercial scale, and in addition twenty-three others were made in relatively small quantities for sale, research, or experimental purposes. The intermediates most needed are now available, although many important ones are still missing, and the prices of many most needed are still abnormally high. The report shows that there were over 200 firms, including seventy-eight manufacturers of dyes, that manufactured coal-tar chemicals in 1918.

The total production of dyes in 1918 was 58,464,446 pounds, valued at $62,026,390, which is an encouraging gain over the 1917 output. The report also shows that, with comparatively few exceptions, prices of individual dyes were lower in 1918 than in 1917 in spite of the general rise in wages and in prices of most other commodities. More than 300 different dyes were made in the United States during 1918. Many of the dyes which were lacking in 1917 appeared on the market in 1918. The report shows that the American industry is especially strong in the classes of dyes known as "azo," "sulphur," and "induline" dyes. Alizarin and two alizarin derivatives were made, but in amounts considerably below the normal demand. These dyes are an important group of fast mordant dyes for wool. No dyes derived from carbazol were made in 1918, and only a bare beginning was made in the production of the extremely important class of vat dyes derived from anthracene, known as indanthrene dyes, which are fast dyes for cotton.

Important progress has been made in the production of synthetic medicinals, so that dependence on Germany is now at an end. Thirty-two different synthetic drugs of coal-tar origin were made during 1918. Three of these—aspirin, salol, and acetphenetidin—were in great demand during the influenza epidemic.

Pyrites and sulphur industry.—During the first session of the Sixty-sixth Congress, at the request of the chairman of the Committee on Ways and Means, the commission transmitted a report on the pyrites and sulphur industry for the use of the committee in consideration of the bill H. R. 5215. The tariff problem connected with this industry is greatly complicated by the fact that pyrites and sulphur are potential rivals in supplying the raw material for the manufacture of sulphuric acid, the largest of all chemical industries, and by the revolutionary changes in the competitive situation which have occurred during the war.

The only important use of pyrites is for the manufacture of sulphuric acid. Sulphur, on the other hand, has additional important outlets in the paper, rubber, dye, insecticide and other industries. Prior to the war pyrites exclusively was used for sulphuric-acid manufacture, and over 70 per cent of the consumption was supplied by Spain and Portugal. The United States is the world's largest sulphur producer, and prior to the war the domestic producers made no attempt to supply sulphuric-acid manufacturers in competition with pyrites. They were able to realize larger profits by maintaining the price of sulphur at $22 per ton f. o. b. New York and supplying the sulphur required by other industries.

The war more than doubled the demand for sulphuric acid and at the same time interfered with imports of the raw material, Spanish pyrites. The demand was met in part by a 35 per cent increase in the domestic output of pyrites, but mainly by substitution of sulphur for pyrites, which resulted in an increase of more than 300 per cent in the domestic output of sulphur.

The competitive conditions in the sulphur industry alone have changed greatly during the war. The original French patents owned by the Union Sulphur Company, which formerly gave this company a practical monopoly of the sulphur market in this country, have expired, and later patents on modifications of this process have recently been declared void by the Circuit Court of Appeals of the Third Circuit. The Freeport Sulphur Company has developed a large output during the war. A third large company, The Texas Gulf Sulphur Company, began production on a large scale in March, 1919. It is expected that there will be sharp competition between these producers. Should this occur and these sulphur companies undertake to supply the requirements of the sulphuric-acid manufacturers in the United States, it may be assumed that the price of sulphur will fall below the pre-war level.

Under such conditions American pyrites producers could expect little, if any, benefit either from a duty on sulphur or one on pyrites. The serious competition which domestic pyrites producers face comes from American sulphur, not from imported pyrites.

* * * * *

Costs and Prices

The Tariff Commission is authorized by the act creating it to investigate "conditions, causes and effects relating to competition of foreign industries with those of the United States, including dumping and cost of production."

The commission stated in its second annual report that because of the world-wide industrial disturbance, due to the war, the difficulties of obtaining reliable cost data, especially in foreign countries, were very great, and that any available information as to cost of production would have been of comparatively little value for tariff purposes. Although disturbances still prevail to some extent, especially in foreign countries, domestic affairs are relatively more settled. The commission believes that the time is now opportune for initiating cost investigations in certain industries which present acute tariff problems.

The first of these investigations undertaken by the commission is in the dye industry. Cost reports have been received from the principal manufacturers in this country, showing not only the cost of the important dyes, but also the cost of the fundamental coal-tar derivatives, known as intermediates. The returns from these reports are being tabulated and will form the basis of a report to Congress. It is the intention of the commission to obtain pe-

(*Continued on page* 9.)

Amanil Colors for Cotton
Union Colors for Mixed Goods
Amacid Colors for Dress Goods

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AMERICAN DYESTUFF REPORTER
Published weekly by
HOWES PUBLISHING COMPANY
Woolworth Bldg., New York Tel. Barclay 7558

Pointed solely toward the welfare and growth of the American Dyestuff Industry. Unbiased contributions appreciated.

A. P. HOWES, President
LAURANCE T. CLARK, Editor

Domestic Subscription, $3 per year. Foreign, $4.
Advertising rates on request.

A HOPELESS MUDDLE

Perhaps the wording of the above heading may be regarded by some as a rather exaggeratedly pessimistic description of the state of affairs now existing in Washington with regard to the dyestuff situation. Nevertheless it it our guess that the majority of both manufacturers and consumers of coal tar colors in this country will be inclined to vote that "the shoe fits."

Certainly something is wrong—extremely wrong—when a small body of presumably intelligent men such as compose the sub-committee of the Senate Finance Committee, cannot reach some sort of a conclusion upon a matter which has been discussed and re-discussed, battledored and shuttlecocked, set forth and re-hashed and served up in so many different styles and by so many people as the question of protection for the industry has.

Enough statistical matter, testimony and argument has been presented and allowed to escape upon the hallowed air of Congressional offices—including the House itself—to equal in volume the collected works of Thomas Carlyle. This is no mere bit of hyperbole, either; we have been making comparisons and were not a little staggered when the fatal truth was driven home. Much of this matter consisted of repetition, or differently worded expositions of the same facts, and it is doubtful if the best efforts of the brightest minds of the age could add one jot or tittle to the information which has already been laid before our Solons in one form or another.

No, there has been no paucity of data to account for the apparent indecision which marks the conduct of the Senate with the Longworth bill. All the necessary aspects of the situation from the standpoint of maker and user have been made plain not once but many times. All that remained after the hearings was to sift out the chaff, select the salient facts, fix the mind firmly upon justice and expediency, *forget precedent and politics*—and draw the logical, inescapable conclusion, whatever it might happen to be. It is more a question of the application of mathematics and business sense than anything else. No matter which way the sub-committee might have decided, we contend that there was nothing to cloud the issue and that a decision could have been rendered weeks ago.

Perhaps "A Hopeless Mystery" would be a better descriptive line for the situation. For if there is no mystery in the lack of definite recommendations which ought to have been forthcoming, then Mr. Webster was a badly mistaken man and wholly incompetent to compile an authoritative dictionary of the English language.

Who can really understand the sickening chaos which appears to be developing every hour? One can suspect, or even voice a very fair conjecture. But it is a puzzle, for all that, and one which can only be cleared up, no doubt, by an examination of the minutes of the recording angel who keeps cases on some of our legislators.

The licensing clause of the Longworth bill appears to have met with little favor from the Senators, who, unlike the members of the House, cannot seem to bring their faculties to bear upon the problem with any degree of clarity and vision. This fact being recognized, a substitute measure was proposed whereby the licensing clause should be stricken out and another, calling for unrestricted and direct importation of German or other dyes in accordance with a list of colors which were not being manufactured, nor for which substitutes

were not being manufactured, in this country, was introduced.

This, according to reports, raised such a united wail that nearly all the clocks of Washington and elsewhere stopped abruptly and had to be set going again by the speedy abandonment of any such suggestion. Details as to the proposed administration of this substitute measure are lacking; it was kept a close secret for some time, and it is likely the case that it presented features which would have proved highly objectionable.

But in the entire absence of anything to work upon, so to speak . . . what's to do, anyway? Out of the murky haze emerges one clear fact at least, and that is that the state of uncertainty, prolonged almost beyond endurance already, and the accompanying uncertainty as to the probable degree of its further prolongation, is producing upon the dye industry of this country an effect which is about as unhealthful as anything could be.

More "hearings" are being held. A despatch from the capital goes so far as to venture the opinion that it may yet take until the middle of next summer before definite action can be secured. This appears to be extreme—but if such chanced to be the upshot of the whole affair, who could lay claim to great surprise after the performances of the past year! And which dye manufacturers then—the German or American—would have control of our markets?

Action—we strive to speak as gently as possible—*is* imperative. If hearings with mortals as the principals prove unable to bring it about, let the Senate try a few spiritualistic seances, or toss a coin or consult the ouija-board—or anything, in short, which is even remotely likely to produce a result or two and end this suspense.

Unless something can be done soon, the country will have conclusive evidence that the Senate has fallen down on its job of lawmaking. And in any case the present muddle would argue crass inefficiency.

DYES AND THE TARIFF COMMISSION

(*Continued from page 7.*)

riodical reports upon these products for some time to come, in order that Congress may be accurately informed concerning the changes in cost and the progress of the industry toward stability.

The commission has also made a study of the cost of producing wool and mutton in the Mountain States, and such cost data will be incorporated as a portion of the report on the wool-growing industry of the world. The cost of producing refined sugar has also been investigated and the results of the field work are being incorporated in a report to be published by the commission.

As already stated, cost information from foreign countries is available now

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in only a very limited degree. As an alternative, however, comparative price studies are feasible, and the commission is now making a study of such comparisons. The purpose is to compare not only foreign and domestic prices, but also domestic costs with domestic and foreign prices. In the dye industry, for example, our domestic costs are being compared with prices in the United States and with those in various foreign countries.

As conditions become more normal, the Tariff Commission plans to extend its inquiries in the field of cost of production. The accounting staff is being enlarged to meet the requirements of new investigations, and greater emphasis will be placed in the future upon the work of international cost of comparisons. Three new investigations are in contemplation—barytes and the barium chemicals industry, the silk industry,, and certain phases of the ferro-alloy industry, and, in so far as the funds of the commission warrant, these will be pressed in detail.

AN IMPROVED MERCERIZING PROCESS

An improvement in the process of mercerizing, recently patented by a Massachusetts man, is described by the inventor as follows:

This invention particularly relates to a method of mercerizing cotton or linen when interwoven with filaments of artificial silk known as viscose, while at the same time protecting such viscose filaments from deleterious attack by the caustic alkali. Viscose is a well-known platic material obtained by special chemical treatment of cellulose. It is valuable for the production of artificial silk, not only because of the luster of its filaments but also because it is not readily inflammable.

Woven fabrics in which viscose silk threads have been interwoven with cotton yarns mercerized before such weaving are attractive textile products, but they are relatively expensive by reason of the additional manipulation of the cotton yarns required for their mercerization. It is not feasible to produce such goods by interweaving unmercerized cotton yarns with viscose threads and afterward subjecting the woven fabric thus constituted to any mercerizing process or treatment heretofore practised or known. The caustic alkali solution customarily used for the mercerization of cotton or linen would seriously damage the associated viscose filaments and spoil the attractiveness of the composite fabric.

The caustic alkali may be prevented from injuring the viscose filaments while still retaining its efficiency for mercerizing the fibers of cotton yarn intermixed with those viscose filaments, by introducing into the solution of caustic alkali certain other chemical compounds, among which are such of the primary or monohydric alcohols as will remain intimately diffused throughout the mercerizing solution of caustic alkali after being incorporated therewith, and will not tend to separate out therefrom on standing at the low temperatures desirable for mercerization. The most available of these are ethyl alcohol and methyl alcohol, either or both of which may be mixed with the mercerizing solution of caustic alkali in suitable quantity.

Some of the monohydric alcohols which have a more complex molecular constitution may be substituted, but they have no advantage over methyl or ethyl alcohol.

The condition of ethyl alcohol in the state known as denatured alcohol, which is relatively cheaper in the market than when not so adulterated, does not materially interfere with its effectiveness for this process. The improved method may be satisfactorily carried on with a mercerizing liquid made by the addition of such denatured alcohol in the proportion of 57 parts by weight to 943 parts of an aqueous solution of sodium hydrate at 60 deg. Tw. This proportion is not rigid; but if the ratio of the quantity of alcohol to that of the caustic alkali in solution at the hydrometric density stated is much less than the ratio just indicated, the viscose silk will

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not be adequately protected; if such ratio is much greater the mercerizing efficiency of the caustic alkali thus modified will tend to become impaired.

Otherwise than such required modification of the mercerizing solution the treatment of the fabric into which both cotton and viscose have been interwoven is substantially the same as that customarily employed in the mercerization of woven fabrics composed entirely of cotton, including the usual means and mode of applying tension thereto for the prevention of shrinkage. It is desirable immediately after these mixed goods have been subjected to the mercerizing process under tension to pass them through a weak acid bath before washing.—*Textiles.*

COAL TAR FIRST AID TO THE BIBULOUS

Weiss and Downs Evolve Method by Which Cream of Tartar and Important Fruit Acids Can Be Obtained from Benzol

Announcement has been made that, by a newly discovered method, coal tar can be made to yield tartaric acid and other important substances which will help to lower the costs of living and lessen the blow of Prohibition.

The details were explained in a joint paper read before the New York Section of the American Chemical Society at 50 East Forty-first Street and written by the inventors and patentees of the process, John M. Weiss and C. R. Downs, respectively the manager and the chief chemist of a well-known firm of chemical manufacturers of this city.

The basis of the process is a method of building up various substances from maleic acid obtained from benzol, one of the derivatives of dark and viscid coal tar. Maleic acid has been separated from the juices of certain plants and fruits, but at so high a cost that it could not be put on the market and was considered merely as a laboratory curiosity. By the Weiss-Downs process, benzol is mixed with air and the vapor is passed over a catalyzer, a material which alters the speed of chemical reactions without being in itself affected. On account of their mysterious power to join other substances in chemical wedlock, catalyzers are known as "chemical parsons."

With maleic acid as a base it is possible to prepare other valuable acids.

Of these, the most welcome to the housekeeper and the trade is tartaric, which hitherto has been made from the cream of tartar, a solid found in the bottom of wine casks and employed principally in the making of baking powder. The United States, before the Prohibition wave engulfed the vineyards where wine grapes are raised, produced ten million pounds of cream of tartar a year and about a million pounds of tartaric acid. As the cream of tartar cannot be obtained except through the fermentation of the wine, the grape juice industry is unable to supply the household want hitherto filled from the vats of the vintner. There was a large importation from Europe before the war, but it was checked by the military situation.

By the new process citric acid can also be derived from the maleic acid base. Citric acid causes the sour taste of lemons and other citrus fruits, and is used in lemonade and orange drink compounds. It is much employed also in the arts.

Lactic acid can also be manufactured inexpensively by the new method. It was originally derived by fermenting milk, as its name implies, although there are now several other processes for preparing it synthetically. Recently farmers have been giving lactic acid as a tonic and appetizer to pigs, for although the porcine breed is supposed always to be hungry, it is found that its craving for food and powers of assimilation, and therefore its weight, could be greatly increased by such a prescription. This acid is consumed in large quantities in the dyeing of wool and is of much worth in various industries.

Succinic acid, which is useful in making many laboratory tests, can also be

derived at a low figure by the newly devised method. As it is obtained by the distillation of amber ordinarily, this substance is costly.

Maleic acid synthesized from benzol, the inventors state, can also be employed as the basis of new dyes, medicinals and perfumes. They believe, in fact, that it will open up an entirely new field of synthetic organic chemistry. Arrangements are being made to manufacture products from this new source on a large scale, as the process would render the United States independent of foreign supplies of several important raw materials. Three American patents have been issued to the authors.

Mr. Weiss, who read the paper, was graduated from the University of Pennsylvania in 1905 with the degree of bachelor of science. He is the author of many scientific monographs and has patented numerous processes connected with chemistry. Mr. Weiss is a member of the American Chemical Society, the Society of Chemical Industry of London, the American Society for Testing Materials, the Franklin Institute, the American Institute of Chemical Engineers, the Societe Chemie Industrielle of France, the Society of Sigma Xi, the American Public Health Association, and a Fellow of the American Association for the Advancement of Science.

C. R. Downs received from Yale the degree of Ph.B. in 1909 and his Ph.D. degree was conferred at the same institution in 1912. He is also accredited with a large number of scientific papers and patents. Dr. Downs is a member of the American Chemical Society, the Society of Sigma Xi and the American Institute of Chemical Engineers.

Following successful research work in dyestuffs in the Mitsui laboratory at Omuda, Kyushu, Japan, Yoshisate Tawara, son of Dr. Yoshizumi Tawara, president of the Tokio Hygienic Laboratory, has been sent to France by Mitsui & Co. for further study and investigation.

BUTTERWORTH-JUDSON TO BUILD NEW PLANTS

The Butterworth-Judson Corporation announces that it has under construction new plants for the production of Gamma acid, H acid and J acid, and that preparations are being made to market a great many colors of this line as soon as the intermediate plants have been completed. This corporation will then be in a position to supply such colors as direct black, diamine black, BH and diamine fast red, F as well as diamine brown M. The research department of the Butterworth-Judson Corporation has also been doing considerable work on cyanthrol and expects to be able in the near future to supply a fast blue equal to the pre-war types.

The Columbia Chemical Company, a West Virginia firm, will erect a building at its plant in Roanoke at an estimated cost of about $30,000.

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CLEARING FUMES FROM SULPHUR BLEACH HOUSE

Opening the sulphur house top and bottom after bleaching is perhaps the quickest way to remove the sulphur fumes that persistently hang in the folds of the goods. While a fan or blower will effect the displacement of the fumes to a certain extent, it is well to remember that a moving current of air will always follow more readily the most direct course between the air inlet and the outlet, which will be around and over the goods.

By having large doors at both sides or ends of the house, full freedom from the outside air to gain access to the folds of the goods is more readily effected. Even in this case sufficient time should elapse between the opening of the house and the entrance of the men to remove the goods.

In a large sulphur house for carpet yarn, under daily observation of the writer, the charging is done during the afternoon and lighting of the brimstone at the close of the day, the house closed and not opened until early the next morning. All doors and openings remain fully open until near noon, when the yarn is removed. No ventilating fan is employed.

The removal of sulphur fumes from a sulphur house by means of air exhaust fan, after the bleaching process has terminated, is not very successful, for the reason that the moving current of air in the house always follows the path of least resistance. While this air current actually does remove some of the sulphur gas, it does not remove it quickly. The solution of this difficulty will be overcome by opening all the doors and windows, and thereby allowing free access of outside air to all parts of the house.

Sulphur dioxide resulting from the burning of brimstone is slightly less than one and one-half times the weight of air, and consequently is likely to be more dense in the lower parts of the sulphur house. It would, therefore, seem best to open the house fully and allow free play for external air. Just how rapidly the sulphur fumes will be displaced will depend upon how close the goods hang together.—*Textile World Journal.*

ENGLISH SEEK VIVID HUES

It seems to be the general opinion that we are in for an era of brighter colors, not only in feminine dress, which is a law unto itself, but in furnishing and decoration. Blue, purple, orange, jade and "flame" are said to be favorite tints in the domestic reconstruction which is now under way. Possibly it is a reaction from the drab of war and a five years' surfeit of khaki. Certainly the War Office have led the way in the design of the medal ribands. A breast which bears the insignia of Mons, Foreign Service and Victory surpasses the rainbow.—*London Daily Chronicle.*

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INQUIRY DEPARTMENT

All classes of chemical work or advice relating to artificial colors, natural dyestuffs, dyewoods, raw materials, extracts, intermediates, crudes, or dyeing chemicals and accessories in general, will be carried out for readers and subscribers of the AMERICAN DYESTUFF REPORTER by this department.

Inquiries of a minor character will be answered on this page, while major matters involving personal investigation, analyses, perfected processes and working formulas, will, if desired, be treated confidentially through the mails. All questions, materials for analysis or letters leading to the opening of negotiations for special work will receive prompt attention if addressed to Inquiry Department, American Dyestuff Reporter, Woolworth Building, New York City.

Question.—T. C. Co.—Can you kindly advise us what intermediates are used in the production of Sulphur Red-Brown, and, if possible, an outline of the process of manufacture?

Answer. — Our investigation shows that Sulphur Red-Brown 2 RK and 6 RK are products made by the Actien-Gesellschaft fur Anilin-Fabrikation, by a secret process. We have been unable to find any data on either the intermediates used or the methods of manufacture. We could give you more information on ordinary Sulphur Browns, but presume you already have this.

SOUTHERN MILL EXPANSION ACTIVITIES

The following new constructions are planned by J. E. Sirrine, mill engineer, of Greenville, S. C.

Santee Mills, Orangeburg, S. C.: Warehouse, 65 by 90, standard mill construction; concrete floors, gravel roof, sprinklers.

Pomona Mills, Greensboro, N. C.: Extension to picker room 60 by 110, standard, fire protection, heating.

Piedmont (S. C.) Manufacturing Company: Remodel and extend power plant; additional water wheels and generators. Equipment purchased.

Chinnabee Valley Mills, Talladega, Ala.: Weave shed 132 by 340, standard; heating, sprinklers, humidifiers; extension weave shed Highland plant, and dye house. Electric drive.

Judson Mills, Greenville, S. C.: Complete sewer and water supply system for about 200 houses.

NEW GREEN DYE FROM GRASS PRODUCED BY CHINESE

Acting Commercial Attache Lynn W. Meekins, at Peking, China, reports that it was announced recently by the *Min Fu Pao*, a Peking newspaper, that a chemist of Shangchenghsien named Yao has invented a green dye, made from a variety of grass, by the same method as that used in the manufacture of indigo. This may be used to dye silk or cotton, and is said to make the fabric bright and durable. Upon the completion of his experiments Mr. Yao will ask the Government to grant him a monopoly.

The high price of foreign indigo has led to a revival of the native industry in the eastern and southern parts of Honan. In Lingluhsien the 1918 crop

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Eosine B and G
Fuchsine

of 2,000,000 catties (2,666,667 pounds) was sold at a profit of $20,000. Planting has been undertaken on a larger scale, and the present year's yield is expected to bring larger returns. Another satisfactory crop is reported in Tungsuhsien.

A group of merchants have obtained the necessary capital and secured official permission for the establishment of a dye factory at Kweitien. Recently the civil governor of the province was notified by the Minister of Agriculture and Commerce that native indigo will be exempt from taxation for three years. This should lead to an increase in the number of plantations, and if the quality of the product continues to improve the import trade will probably be permanently affected.

DYE IMPORTS WOULD BE LICENSED BY CHEMICAL ENGINEERS

At the meeting of the American Institute of Chemical Engineers at Savannah, Ga., the following resolution was unanimously adopted:

"The American Institute of Chemical Engineers in convention assembled at Savannah, Ga., recognizing the importance of protecting the coal-tar industry and the dye industry in particular, not only to the industrial interests of the country in general, but also to its public health and the protection of the country in time of war, wishes to express itself in the following resolution:

"That the American Institute of Chemical Engineers urges upon the United States Senate the importance of enacting the Longworth bill embodying the licensing plan protecting both the manufacturer and user of dyes."

DYEING FABRICS CONTAINING ARTIFICIAL SILK

So many varieties of artificial silk are on the market that no attempt will be made to enumerate and classify them here. All these in combination with cotton in a fabric, when dyed with substantive colors in a boiling hot dyebath, will dye the silk much darker than the cotton. The viscose silk will dye somewhat lighter than the other silks, and for this reason it is an advantage to the dyer to be able to distinguish the different artificial silks—at least to be able to distinguish those that have dyeing properties differing from the main class of artificial silks.

Cotton and Artificial Silk

When a combination fabric of cotton and artificial silk is dyed, it is necessary that the silk be of a lighter shade than the cotton in order to obtain the best effect. If the dyebath is kept at a temperature of from 50 to 60 deg. Fahr., the artificial silk will be of a shade lighter than the cotton. It also happens in some cases that the cotton will be of a kind that does not absorb the dyestuff readily. In this event the cotton must be treated before dyeing so as to increase its affinity for the dyestuff.

It might happen that the dyer will be called upon to dye a fabric composed of cotton and artificial silk in which the artificial silk will not take the dye as readily as the cotton. In this event the artificial silk would remain lighter than it should be. In such an event correction may be made by raising the temperature of the dye-

bath to as high as 120 deg. Fahr. At this higher temperature the dye goes on the fibers faster, and becomes better fixed. The result is that the goods are faster to crocking.

Basic colors do not give good results on combinations of cotton and artificial silk. When this class of dyestuffs is used the artificial silk is always dyed darker than the cotton. An exception to this is viscose silk, but even in this case the basic colors should be used only when the desired brightness of shade cannot be obtained with the substantive colors. When basic colors are used, the material to be dyed is mordanted in the usual manner with tannin and antimony salt and dyed in a cold bath.

There are many colors suitable for dyeing combinations of cotton and artificial silk, but a list of them at this time would be useless, for many of them cannot be obtained, due to the present confusion in the dyestuff market. Gray may be used to good advantage for deepening the shade of blues and browns instead of black. The dyeing is carried out in a short bath, with the addition of Glauber salt and soda. Green olive oil soap may be used in place of soda with good results.

Half-Wool and Artificial Silk

The dyeing of half-wool and artificial silk fabrics may be carried out by the one-bath or the two-bath method. When dyed by the former method better fastness is secured, and at the same time there is a considerable saving of time. Unfortunately, the substantive colors which dye wool, cotton and artificial silk the same depth of shade in one bath are limited in number, and these to a few staple shades. Therefore the fashionable shades cannot be dyed in the one bath with these dyestuffs. Should there be a difference in the shade of the wool and the cotton, use may be made of the neutral dyeing wool colors which are generally used when half-wool fabrics are being dyed. This method can be used only for those fabrics in which viscose or nitrocellulose silk has been woven. The other classes of artificial silks would dye too dark by this method.

The goods are entered cold and dyed for about 30 minutes, after which the temperature is raised to the boil, and the dyeing continued until the wool has taken on the desired shade. Should it be necessary to correct the shade of the cotton by adding more substantive colors, it is the better plan to cool down the bath and to dye for a while at the lower temperature. If it is necessary, the bath may again be raised to the boil.

Smoother dyeings may be obtained, but at the cost of more time and labor, by the two-bath method. This is carried out in the same manner as for half-wool fabrics that have no addition of artificial silk.—*Posselt's Textile Journal.*

(*Concluded next week.*)

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BRITAIN TO ABANDON DYE LICENSING PLAN?

As this issue of the REPORTER goes to press, word is received in this office of a cable from England stating that the licensing system for the regulation of dye imports into that country, conducted by the British Board of Trade and the Dyes Commissioner, has been abandoned. The message, which has not yet been verified, further states that all imports into that country may now be freely made, unhampered by any restrictions.

NOTES OF THE TRADE

Announcement has been made to the trade that the offices and warehouse of the Albany Chemical Company, of New York City, have been moved to that firm's new building at 108 John Street. The transfer took place on the first of the year.

To manufacture woolen cloth, etc., the Demetre Corporation has been incorporated under the laws of New York with a capital of $300,000. Offices will be in Manhattan, and the incorporators are A. Demetre, J. Demetre and J. Vinner.

Under the laws of West Virginia the Cowen Coal & Coke Company has been incorporated with a capital of $500,000. Headquarters will be in Wheeling.

Notice of organization has been filed by the Regal Color & Chemical Company to operate at 357 Westminster Street, Providence, R. I. This company, of which James C. Carmack is the head, will manufacture chemicals, colors, etc.

R. Lechner Co., *Inc.*

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A New York real estate firm announces the sale to Herman A. Metz of the five-story fireproof American basement dwelling at 38 West Seventy-fourth Street, that city. Mr. Metz, before making the purchase, was the tenant of the dwelling, which is part of the Clark estate.

Trade names for vat colors in England have been chosen as follows: Vat dyes of British Dyes, Ltd., are termed Chloranthene colors; those of Levinstein, Ltd., are called Duranthrene colors; those of L. B. Holliday & Co. are known as Hydranthrene colors, and those of Scottish Dyes, Ltd., are marketed under the name of Caledon colors.

The Aero Silk Mills have been incorporated under the laws of New York with a capital of $40,000 to manufacture silks. Headquarters will be located in Manhattan, and the incorporators consist of S. J. Lefschutz, M. Rosenberg and H. J. Garfinkel.

With a capital of $50,000 the Roscoe Broad Silk Mills, Inc., have been chartered under the laws of New York to manufacture broad silks, cotton goods and textiles. Offices of the company will be in Manhattan, and the incorporators are M. Schlesinger, E. Schlesinger and I. Schlesinger.

To engage in the manufacture of silk, wool and other textile fabrics, the Falcon Silk Company, Inc., has been incorporated under the laws of New Jersey. The capital of the new concern, headquarters of which will be located in Paterson, is $75,000.

To manufacture knit goods the Silk Craft Knitting Company, Inc., has been incorporated under the laws of New York. The capital of the company is given as $55,000. Headquarters will be in Manhattan, and the incorporators consist of E. I. Hanson, M. Rosen and W. H. Roe.

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